

FEB 20 2007

Application No. 09/840,085

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Docket No.: Y0087.70010US00

IN THE CLAIMS

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1. (Currently Amended) An avian pancreatic polypeptide of SEQ ID NO: 6, modified by substitution of at least one amino acid residue, ~~said at least one residue being exposed on the alpha helix domain of the polypeptide when the polypeptide is in a tertiary form, wherein said at least one substituted residue is selected from a site on a known protein through which interaction with a Bel2 protein occurs, wherein said modified avian pancreatic polypeptide binds to the Bel2 protein, and~~ wherein the modified avian pancreatic polypeptide comprises an amino acid sequence selected from SEQ ID NOs: 23, 24, 25, 26, 27, 28, or 29.

2-13. (Cancelled)

14. (Withdrawn) A phage-display library comprising a plurality of recombinant phage that express the modified avian pancreatic polypeptide of claim 1.

15. (Withdrawn) A phage-display library comprising a plurality of recombinant phage that express the modified avian pancreatic polypeptide of claim 1.

16. (Withdrawn) A phage-display library comprising a plurality of recombinant phage that express a protein scaffold modified by substitution of at least one amino acid residue, said at least one residue being exposed on the polypeptide when the polypeptide is in a tertiary form.

17. (Withdrawn) The phage-display library of claim 16, wherein said protein scaffold comprises the avian pancreatic polypeptide.

18. (Withdrawn) A phage selected from the library of claim 16 or 17.

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19. (Previously presented) An isolated avian pancreatic polypeptide modified by substitution of at least one amino acid residue, wherein the modified avian pancreatic polypeptide is selected from the group consisting of:

- (a) an isolated polypeptide comprising the amino acid sequence of SEQ ID NO: 23;
- (b) an isolated polypeptide comprising a fragment of at least twelve (12) amino acids of SEQ ID NO: 23;
- (c) an isolated polypeptide comprising the amino acid sequence of SEQ ID NO: 23, wherein the polypeptide has one or more conservative amino acid substitutions in SEQ ID NO: 23, and is at least 90% identical to SEQ ID NO: 23;
- (d) an isolated polypeptide comprising the amino acid sequence of SEQ NO: 23, wherein the polypeptide has one or more naturally occurring amino acid substitutions in SEQ ID NO: 23, and is at least 90% identical to SEQ ID NO: 23; and
- (e) an isolated polypeptide with at least ninety-five (95) percent amino acid homology to SEQ ID NO: 23, and

wherein the modified avian pancreatic polypeptide binds to a Bcl-2 protein.

20. (Withdrawn) A nucleic acid encoding any one of the polypeptide s in claim 19.

21. (Withdrawn) A method of preparing a miniprotein that modulates the interaction between a known protein and another molecule, comprising the steps of:

- (a) identifying at least one amino acid residue contributes to the binding between a known protein and another molecule; and
- (b) modifying an avian pancreatic polypeptide by substitution of said at least one amino acid residue, such that it is exposed on the alpha helix domain of the polypeptide when the polypeptide is in a tertiary form.

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22. (Withdrawn) A method of identifying a miniprotein that modulates the interaction between a known protein and another molecule, comprising the step of isolating at least one recombinant phage clone from the phage display library of claim 16 that displays a protein scaffold that modulates the association between a known protein and another molecule.

23. (Cancelled)

24. (Currently Amended) The modified polypeptide of claim 1, wherein the modified avian pancreatic polypeptide binds to ~~the~~ Bcl-X_L protein.

25. (Currently Amended) The modified polypeptide of claim 1, wherein the modified avian pancreatic polypeptide binds to ~~the~~ Bcl2 protein.

26-27. (Cancelled)

28. (Previously Presented) An avian pancreatic polypeptide of SEQ ID NO: 6, modified by substitution of a portion of the avian pancreatic polypeptide with an amino acid sequence selected from SEQ ID NOs: 23, 24, 25, 26, 27, 28, or 29.

29. (Previously Presented) The modified polypeptide of claim 1, wherein the modified avian pancreatic polypeptide comprises amino acid sequence SEQ ID NO: 25.

30. (Previously Presented) An avian pancreatic polypeptide of SEQ ID NO: 6, modified by substitution of at least one amino acid residue, said at least one residue being exposed on the alpha helix domain of the polypeptide when the polypeptide is in a tertiary form, wherein said at least one substituted residue is selected from a site on a known protein through which interaction with a Bcl2 protein occurs, wherein said modified avian pancreatic polypeptide binds to the Bcl2 protein, and wherein the modified avian pancreatic polypeptide comprises a hydrophobic core having a sequence Gly Pro Ser Gln Pro Thr Tyr Pro Gly Asp Asp Ala Pro, and the modified avian pancreatic polypeptide contains residues on the interior face of the alpha-helix at positions 17, 20, 27, 30 that are respectively Leu, Phe, Tyr, and Asp.

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31. (Previously Presented) An avian pancreatic polypeptide of SEQ ID NO: 6, modified by substitution of at least one amino acid residue, said at least one residue being exposed on the alpha helix domain of the polypeptide when the polypeptide is in a tertiary form, wherein said at least one substituted residue is selected from a site on a known protein through which interaction with a Bc12 protein occurs, wherein said modified avian pancreatic polypeptide binds to the Bc12 protein, and wherein the modified avian pancreatic polypeptide comprises a hydrophobic core having a sequence Gly Pro Ser Gln Pro Thr Tyr Pro Gly Asp Asp Ala Pro, and the modified avian pancreatic polypeptide contains, at positions 20, 23, 25, 27, 30, 32, 33, 34, and 35, residues Phe, Arg, Leu, Tyr, Asp, Ile, Asn, Arg, Tyr respectively.